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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,193	09/10/2001	Klas Kristrom	SUNDS-123	2388

7590 05/22/2007

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ART UNIT	PAPER NUMBER
3653	

MAIL DATE	DELIVERY MODE
05/22/2007	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/936,193
Filing Date: September 10, 2001
Appellant(s): KRISTROM ET AL.

Scott E. Charney
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2-23-2007 appealing from the Office action mailed 4-5-2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

3,404,065	Ingemarsson	10-1968
4,676,903	Lampenius et al.	7-1987

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 10, 11 and 13-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 3,404,065 to Ingemarsson ("*Ingemarsson*") in view of US Patent No. 4,676,903 to Lampenius ("*Lampenius*").

In regard to claims 10, 22 and 24, Ingemarsson discloses an apparatus for separating a fiber suspension (Col. 1, line 14) which includes:

- a housing (see Fig. 1);
- a stator (18) mounted centrally within said housing (See Fig. 1);
- a rotary screen (32) rotatably mounted between said housing and said stator thereby dividing said housing into
    - a screen chamber (see Fig. 1) between said housing and said rotary screen; and
    - an accept chamber (See Fig. 1) between said rotary screen and said stator;
- an inlet (36);
- a reject outlet (48);
- an accept outlet (56).

While Ingemarsson does disclose at least one barrier member (60) fixedly attached to the stator and extending axially along the length of the stator (See Fig. 1) wherein the barrier member extends radially from the stator to the rotary screen (See

Fig. 2), wherein the accepted fiber suspension is substantially prevented from tangentially passing the barrier member and the barrier member creates a pulse through the rotary screen, wherein the at least one barrier member includes a pulse surface (See Fig. 2; see also col. 7, lines 57 et seq.), Ingemarsson does not disclose a barrier member with pulse surface having a shape such that the distance between said pulse surface and said rotary screen decreases in the direction of rotation of said rotary screen, the decrease beginning from that intersection of the barrier member and the stator.

However, Lampenius discloses:

• at least one barrier member (see e.g. Fig. 2 or 3) fixedly attached to the stator and extending axially along the length of the stator (see e.g. Fig. 2 or 3) wherein the barrier member extends radially from the stator to the rotary screen (See Fig. 2), wherein the accepted fiber suspension is substantially prevented from tangentially passing the barrier member and the barrier member creates a pulse through the rotary screen;

• wherein the at least one barrier member includes a pulse surface (See Fig. 2, see also col. 3, lines 25 et. seq.) facing the rotary screen wherein the pulse surface has a shape such that the distance between said pulse surface (2 and 3) and said rotary screen decreases in the direction of rotation of said rotary screen, the decrease beginning from that intersection of the barrier member and the stator (see e.g. Fig. 2 or 3).

It would be obvious to one of ordinary skill in the art to use the barrier member of Lampenius in Ingemarsson's device. The motivation to make the combination is provided directly from the references. Lampenius discloses it is well known in the art to have a barrier member with a pulse surface wherein the leading edge of the pulse surface extends towards the screen until a minimum clearance point (col. 3, lines 25 et seq.). This structure for the pulse surface creates a positive pulse (*Id.*). This positive pulse contributes to induce flow in the screen zone through the apertures within the screen (*Id.*). Therefore, using a structure such as Lampenius' barrier member would contribute to induce flow in the screen zone through the apertures within the screen. Further, there is additional motivation to use Lampenius' structure in Ingemarsson's device. Lampenius' barrier member includes a side plane 4 which produces negative pulses which are effective in keeping the screen from plugging (col. 4 ,lines 15-20). These negative pulses produced by Lampenius' barrier members would, when used in Ingemarsson's device, function just as Applicant's device (alluded to in Applicant's remarks page 8, wherein Applicant describes the negative pressure along the backside of barrier element pulling the less course material back into the accept chamber). Therefore, the substitution of Lampenius barrier member into Ingemarsson's device would not only contribute to induce flow in the screen zone through the apertures within the screen, but also produce negative pulses. Therefore, it would be obvious to one of ordinary skill in the art to use Lampenius' barrier member in Ingemarsson's device.

In regard to claim 11, see Ingemarsson col. 1, line 14.

In regard to claims 13-15, see Lampenius Fig. 2. In particular regard to claim 15, Fig. 2 discloses the pulse surface 2 and 3 is non-linear.

In regard to claims 16 and 17, see Ingemarsson Fig. 1, see also col. 6, lines 18 et seq.

In regard to claims 18-19, see Lampenius Fig. 2.

In regard to claim 20, Lampenius does not appear to specifically disclose the exact amount of distance between the barrier member and the screen, however, it would be obvious to one of ordinary skill in the art to make the minimum distance from 4-10mm.

In regard to claims 21 and 23, see Lampenius Fig. 2 or 3.

In regard to claim 25-27, see Lampenius col. 2, lines 25 et seq.

(10) Response to Argument

Appellant states,

> "Ingemarsson and Lampenius in combination do not make out a prima facie case of obviousness with respect to claims i0, ii, and 13-27 because these references, even if taken in combination, do not teach or suggest the recitations in independent claims I0, 22, and 24 of a stator including at least one barrier member fixedly attached to said stator, and extending axially along the length of said stator, said at least one barrier member extending radially from said stator to said rotary screen whereby said accepted fiber suspension is substantially prevented from tangentially passing said at least one barrier member and said at least one barrier member creates a pulse through said rotary screen, said at least one barrier member including a pulse surface facing said rotary screen, said pulse surface having a shape such that the distance between said pulse surface and said rotary screen decreases in the direction of rotation of said rotary screen, the decrease beginning from the intersection of the barrier member and the stator."

Examiner disagrees and asserts that the combination of Ingemarsson in view or Lampenius does disclose the claimed invention as set forth in the final reject and reiterated in the section (9) Ground of rejection, above. As the appellant has failed to identify which element is not shown by the combination, the examiner responds by maintaining the combination shows all the claimed limitations and draws attention to the Grounds of rejection section above for specific citations relative to the claim elements.

Appellant continues following a discussion of the function of the Ingemarsson and Lampenius devices with,

> "Even in this oversimplification of the two references, one can readily see that they operate in completely opposite manners and any attempted combination of the two references would not have been obvious to one of ordinary skill in the art at the time of the invention."

Examiner acknowledges and does not dispute the fact that the devices function differently in that one screens from the outside in while the other screens from the inside out. Examiner however disagrees with the appellant and maintains that it would have been obvious to one ordinary skill in the art to modify Ingemarsson by utilizing the pulse member of Lampenius. Both references are devices for screening pulp and are therefore in analogous arts. Furthermore, as discussed in detail below, Lampenius provides motivation for the combination in that a more effective pulse member is disclosed (c2 lines 18-32, c2 lines 50-55, c4 lines 23-37, and c5 lines 15-30). It is important to note the only modification being made to the Ingemarsson device is the use of the pulse member of Lampenius (figure 3a) in place of the pulse member (60) shown

in Ingemarsson. Examiner maintains that Ingemarsson shows all the claim limitations except that the decrease in distance between the pulse surface and the rotary screen begins from the intersection of the barrier member and the stator. Examiner further maintains that Lampenius discloses this feature (fig 3a) and provides motivation for making the combination (c2 lines 18-32, c2 lines 50-55, c4 lines 23-37, and c5 lines 15-30).

Appellant continues,

> "Notwithstanding the Examiner's assertion, one of ordinary skill in the art at the time the invention was made would not combine these references because there would be no motivation to do so."

Examiner maintains that there is motivation to combine these references as provided by Lampenius. As set forth in the final office action,

> "It would be obvious to one of ordinary skill in the art to use the barrier member of Lampenius in Ingemarsson's device. The motivation to make the combination is provided directly from the references. Lampenius discloses it is well known in the art to have a barrier member with a pulse surface wherein the leading edge of the pulse surface extends towards the screen until a minimum clearance point (col. 3, lines 25 et seq.). This structure for the pulse surface creates a positive pulse (*Id.*). This positive pulse contributes to induce flow in the screen zone through the apertures within the screen (*Id.*). Therefore, using a structure such as Lampenius' barrier member would contribute to induce flow in the screen zone through the apertures within the screen. Further, there is additional motivation to use Lampenius' structure in Ingemarsson's device. Lampenius' barrier member includes a side plane 4 which produces negative pulses which are effective in keeping the screen from plugging (col. 4 ,lines 15-20). These negative pulses produced by Lampenius' barrier members would, when used in Ingemarsson's device, function just as Applicant's device (alluded to in Applicant's remarks page 8, wherein Applicant describes the negative pressure along the backside of barrier element pulling the less course material back into the accept chamber). Therefore, the substitution of Lampenius barrier member into Ingemarsson's device would not only contribute to induce flow in the screen zone through the apertures within the screen, but also produce negative pulses. Therefore, it would be obvious to one of ordinary skill in the art to use Lampenius' barrier member in Ingemarsson's device."

Examiner also points out other parts of Lampenius that provide further motivation. At column 2 lines 18-37 Lampenius states,

> *"One object of the present invention is to provide a rotating element which increases the intensity of the pulses generated near the openings, either orifices or slots within the screen plate, for the purpose of creating the negative pulses which are necessary to backwash the screen, and to prevent plugging, thus increasing the flow of the fiber suspension through the openings of the screen.*
>
> *Another object is to provide a rotating element with very high frequency pulses in addition to sufficient amplitude.*
>
> *Another object is to provide a rotating element which produces sharp and steep negative pulses, thus resulting in high intensity.*
>
> *Still another object is to reduce the power requirements.*
>
> *Another object is to provide a rotor which permits to operate with smaller orifices in the screen thus improving the screening efficiency."*

At column 2 lines 50-55 Lampenius states,

> *"It has now been found that a specific shape of the rotor surface and the blade type segments as described hereinbelow, is particularly advantageous in producing the higher intensity pulses and in creating sufficient negative pulses so that plugging of the screen is minimized."*

At column 4 lines 23-37 Lampenius states,

> *"A very sharp negative pulse is produced by the 90.degree. angle in the rotor surface or in the blade type segments. This is due to the rapid change in the flow path of the fluid coupled with a Bernouilli effect caused by the increasing velocity of the fluid within the minimum rotor or blade type segment clearance point. This severe or rapid change in pulsation makes the rotor or the blade type segment more effective in back-flushing the screen cylinder. The explanation for this effect is that the maximum velocity and acceleration of the fluid which goes through the apertures during back-flushing must be greater than with conventional pulse producing rotating elements because the change in pulses or amplitude with time is much greater with a contour surface (see FIG. 4a)."*

At column 5 lines 15-30 Lampenius states,

> *"Other advantages of the rotor and blade type segments according to the present invention are that it is possible to reduce substantially the size of the apertures of the screen without any appreciable increase in power consumption, nor with any substantial loss in long fibers and with good yield of the accept portion. The consistency of the accept may be kept essentially the same as the consistency of the stock at the inlet.*
>
> *The rotor as shown in FIG. 3 and the blade type segment shown in FIG. 5 may be used with conventional screen plates and also in conjunction with the screen plate having a contour profile according to U.S. Ser. No. 472,742 as shown in FIG. 6."*

Examiner asserts that in addition to the citations from the final office action all of the proceeding excerpts from Lampenius show a more effective pulse member and provide motivation to combine the references as set forth in the final office action.

Appellant continues,

> "To begin, it is important to note that the design of the barrier element depends on the method of screening because there is a vast difference in the character of the pulses to be created in order to clear the screen, depending upon what method is used."

Examiner acknowledges this statement and points out that at column 1 lines 51-60 Lampenius also states,

> *"It should be stressed that different applications have different requirements. In some applications, it is necessary to achieve a high content of long fibers, especially secondary fibers, in the accepts because the long fibers give strength to the final product, for instance paper. In other applications, on the other hand, the contrary is true. For instance, in virgin or pulp mill fibers, it is desirable to concentrate the long fibers in the reject for reject refining."*

Examiner contends that one skilled in the art would look to other technological advances in the art in order to develop the best system for a given application. Therefore one of ordinary skill would investigate Lampenius which examiner contends

is analogous art and would be motivated to use the pulse member disclosed in Lampenius for the reasons stated above. Furthermore Examiner contends that while the devices function differently ultimately the pulses perform the same tasks. Forcing accepted material through the screen and clearing the screen. Examiner contends that regardless of which pulse (the negative or positive) performs which function that the pulse member of Lampenius is more effective and therefore one of ordinary skill in the art would have been motivated to utilize the pulse member of Lampenius in the device Ingemarsson.

Following a discussion of the functioning of the Ingemarsson and Lampenius devices the appellant states,

> "A screening apparatus with a rotor provided with blades would simply not be used to screen coarse suspensions since there is a substantial risk of larger particles getting stuck and damaging the equipment. Therefore, it is highly unlikely that one skilled in the art would look to utilize the barrier member of Lampenius in a device such as Ingemarsson's to arrive at the presently claimed invention, as suggest by the Examiner."

Examiner contends that in making this statement the appellant has misconstrued the combination set forth by the examiner. Appellant discusses a rotor with blades and the risk of larger particles getting stuck and damaging equipment. Examiner asserts that the combination only utilizes the pulse surface of Lampenius in place of the pulse surface of Ingemarsson. Therefore the relative position of all the components and the motion thereof is the same as in the Ingemarsson device and the appellant's device. I.E. the pulse member is attached to the stator, which is stationary and disposed in the accepted region. Therefore there would be no larger particles in this region as they would not be able to pass through the screen. The larger particles are confined to the

screen chamber where they do not have direct access to the pulse member due to the screen. Examiner also asserts that "one skilled in the art would look to utilize the barrier member of Lampenius in a device such as Ingemarsson's to arrive at the presently claimed invention" for the reasons provided above particularly in that the barrier member of Lampenius creates more effective pulses affording multiple advantages.

Appellant concludes by stating,

> "Neither Lampenius nor Ingemarsson provide the motivation to make the combination suggested by the Examiner. Rather than finding the motivation to combine the references in the prior art, the Examiner's rejection is an example of hindsight reconstruction in which the Examiner has selected features from several prior art references to create the subject matter claimed herein using the applicant's specification as a "template." Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n, 988 F.2d 1165, 26 U.S.P.Q.2d 1018 (Fed. Cir. 1993). Because Lampenius and Ingemarsson are directed at completely opposite-acting devices, they are not candidates for combination, and cannot be combined to obviate the present invention without resort to inappropriate hindsight reconstruction using the present invention as a template. It is a well-established principle of patent law that hindsight reconstruction of an invention is improper. See, for example, Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 227 U.S.P.Q. 543 (Fed. Cir. 1985); In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988)."

Examiner maintains that there is motivation to make the combination of Ingemarsson in view of Lampenius as shown in the final office action and in detail throughout this document. Examiner further points out that at column 5 lines 25-30 Lampenius states,

> "*The rotor as shown in FIG. 3 and the blade type segment shown in FIG. 5 may be used with conventional screen plates and also in conjunction with the screen plate having a contour profile according to U.S. Ser. No. 472,742 as shown in FIG. 6.*"

Examiner asserts that Lampenius therefore also anticipates the use of the disclosed structures with other screen plates. Examiner contends that this also

supports the combination suggested by the examiner as in addition to providing motivation, more effective pulses etc., Lampenius also discusses the use of the disclosed structures with other screen plates. Furthermore as discussed previously Lampenius discusses different applications having different requirements (c1 lines 52-60) therefore utilizing the disclosed pulse member with another device such as that disclosed by Ingemarsson would be obvious to one of ordinary skill in the art for the reasons discussed in detail above.

Conclusion

Examiner maintains that the rejection of claims 10, 11, and 13-27 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,404,065 to Ingemarsson in view of U.S. 4,676,903 to Lampenius is proper and should be affirmed.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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